

**REMARKS**

Claims 1, 2, 4 and 6-17 are pending in the present application.

Claims 1 has been amended to specifically recite that the foodstuff has 3-60% short-chain amylase relative to the entire starch. Support for the amendment is provided in paragraph [0018].

Claim 17 is a newly added claim which is supported by, at least, previous claims 1, 2 and 4.

There is no new matter entered as a result of the amendments.

Reconsideration based on the following comments is respectfully requested.

**Interview Summary**

Applicants sincerely appreciate the teleconference of February 22, 2010 wherein the previous rejection was clarified. The instant amendments and remarks are presented in an effort to advance the application towards allowance in light of the comments of record.

Claim Rejections - 35 USC § 102

Claims 1-2, 4, 6-7 and 11-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Y-C. Shi (USP 6,890,571).

Claim 1 has been amended to specifically recite that the foodstuff has 3-60% short-chain amylase relative to the entire starch.

Shi '571 is cited as teaching a slowly digestable starch compound with 98 % short-chain-amylose (SCA) which is diluted by adding it to a foodstuff. Accordingly, the Office considers the SCA content of the foodstuff to be below 70 %. Applicants respectfully submit that Shi '571 fails to recite the claimed invention.

Example 3C, of Shi '571, discloses a foodstuff constituted of 14.4 % (w/w) cake flour, 39.0 % of the slowly digestible starch compound and 46.6 % of further components that do not contain starch. The foodstuff of this example has less than 70 % SCA when referring to the whole foodstuff which is different from instant claim 1.

In claim 1, as amended, SCA refers only to the entire starch. Even if slowly digestible starch is 90 %, as in column

3, lines 44 - 47 of *Shi '571*, and counting the cake flour as being pure starch, which is impractical, the foodstuff of example 3C has 66% SCA based on the following calculation:

$$\frac{SCA}{starch(total)} = \frac{0.9 \times 39.0}{14.4 + 39.0} = 0.66 = 66\%$$

A starch content of 66 % is above the range of 3 - 60 % as set forth in claim 1 as amended.

Furthermore, the foodstuff according to *Shi '571* does not have network-linked mixed crystallites consisting of SCA and basic starch. Claim 1, as amended, recites a foodstuff containing a starch network and specifically recites "*a starch network is generated [...], this starch network is retained in the course of subsequent processing steps*". A starch network having network-linked mixed crystallites is a gel. However it is clear from *Shi '571* that the slowly digestible starch described therein is not a gel. Instead, as mentioned in column 4, lines 25 - 29 the starch may be purified using filtration or centrifugation. This is not possible with gels. In column 4, lines 34 - 36 it is mentioned that the starch crystallizes, therefore, it is not a gel. In column 4, lines 36 - 39 it is

mentioned that the starch may be spray dried, freeze dried, flash dried or air dried. This is also impossible with gels. The methods of working up are repeated in the examples. Especially, it is mentioned in example 1B that the product is allowed to level off. Gels are not able to level off.

A starch is debranched to result in a starch mixture of above 90 % SCA and the residue consisting of long chain amylose wherein the long chains are just marginally longer than the SCA due to exposure to the debranching enzyme. Due to the high content of SCA it will not form a network.

Based on the foregoing the claimed starch network having network-linked mixed crystallites can neither be found in the slowly digestible starch nor in the foodstuff according to Shi '571.

Based on the foregoing deficiencies a rejection of claim 1 under 35 U.S.C. 102(b) is improper due to the failure of Shi '571 to recite critical claim elements.

Claims 2, 4, 6-7 and 11-16 all ultimately depend from claim 1 and therefore are patentable over Shi '571 for, at least, the same reasons as claim 1.

The rejection of claims 1-2, 4, 6-7 and 11-16 under 35 U.S.C. 102(b) as being anticipated by Y-C. Shi (USP 6,890,571) is rendered moot by amendment.

Claim Rejections - 35 USC § 103

Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Y-C. Shi (USP 6,890,571) in view of Y-C. Shi (USP 5,593,503).

Claims 8-10 ultimately depend from claim 1 and have all of the limitations of claim 1 as amended.

Shi '571 is discussed above and all comments are equally applicable. In addition to the deficiencies mentioned above Shi '571 fails to recite specific food products. Shi '503 is cited as disclosing that which is otherwise lacking in the primary reference.

Applicants respectfully submit that it is improper to combine the references due to their contrary teachings. A key feature of Shi '571 is the use of a low amylose starch. Therefore, a skilled person would not substitute low amylase starch by high amylose according to Shi '503 if the desire is to

keep the effects of the starch composition according to *Shi '571.*

Moreover, according to claim 1 of *Shi '571*, at least 50 % of the claimed starch composition is digested within two hours as measured by simulated digestion. However, if using a resistant granular starch, according to *Shi '503*, in the starch composition according to *Shi '571* it will be hard to obtain such a high digestion rate since resistant starch escapes digestion in the small intestine of healthy individuals.

It is especially mentioned in the abstract of *Shi '503* that the resistant granular starch has high dietary fiber content. Dietary fiber is the indigestible portion of plant foods that pushes food through the digestive system, absorbs water and eases defecation. It acts by changing the nature of the contents of the gastrointestinal tract, and by changing how other nutrients and chemicals are absorbed.

Even if one of skill in the art did combine the references they would still not have a teaching of the SCA concentration as set forth in claims 8-10 by dependence from claim 1 and therefore they would still not arrive at the claimed invention.

The rejection of claims 8-10 under 35 U.S.C. 103(a) as being unpatentable over Y-C. Shi (USP 6,890,571) in view of Y-C. Shi (USP 5,593,503) is rendered moot by amendment.

#### CONCLUSIONS

Claims 1, 2, 4 and 6-17 are pending in the present application. All claims are now believed to be in condition for allowance. Notice thereof is respectfully requested.

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Respectfully submitted,

  
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